Electronic Supplementary Material (ESI) for RSC Advances.

Supplemental information

Table S1. The brands and alcohol concentration of commercially available liquor

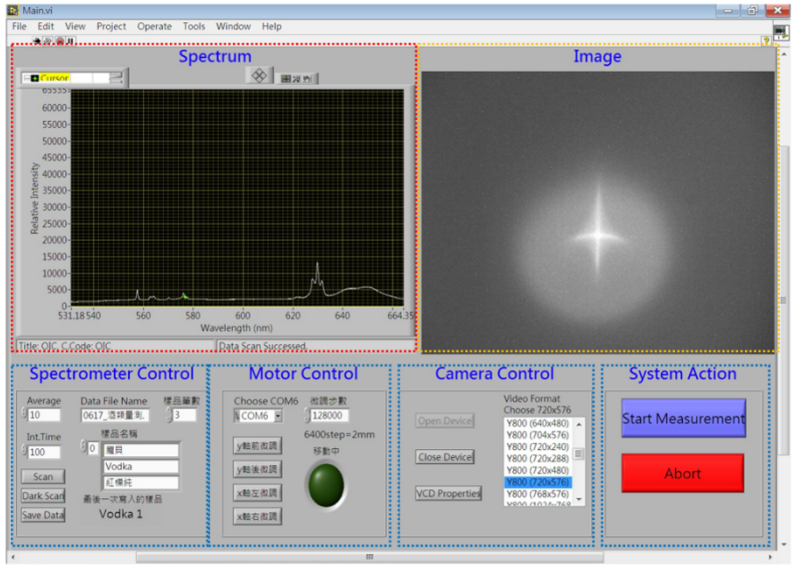
Item of alcohol	Alcohol concentration (%)
Tenwey Rice Cooking Wine	19.5%
Red Label Rice Cooking Wine	22%
Bacardi Rum	40%
Beefeater Gin	40%
Bombay Gin	40%
Absolut Vodka	40%
Agora Kinmen Kaoliang	58%

Table S2. The Raman shift and molecular vibration of methanol

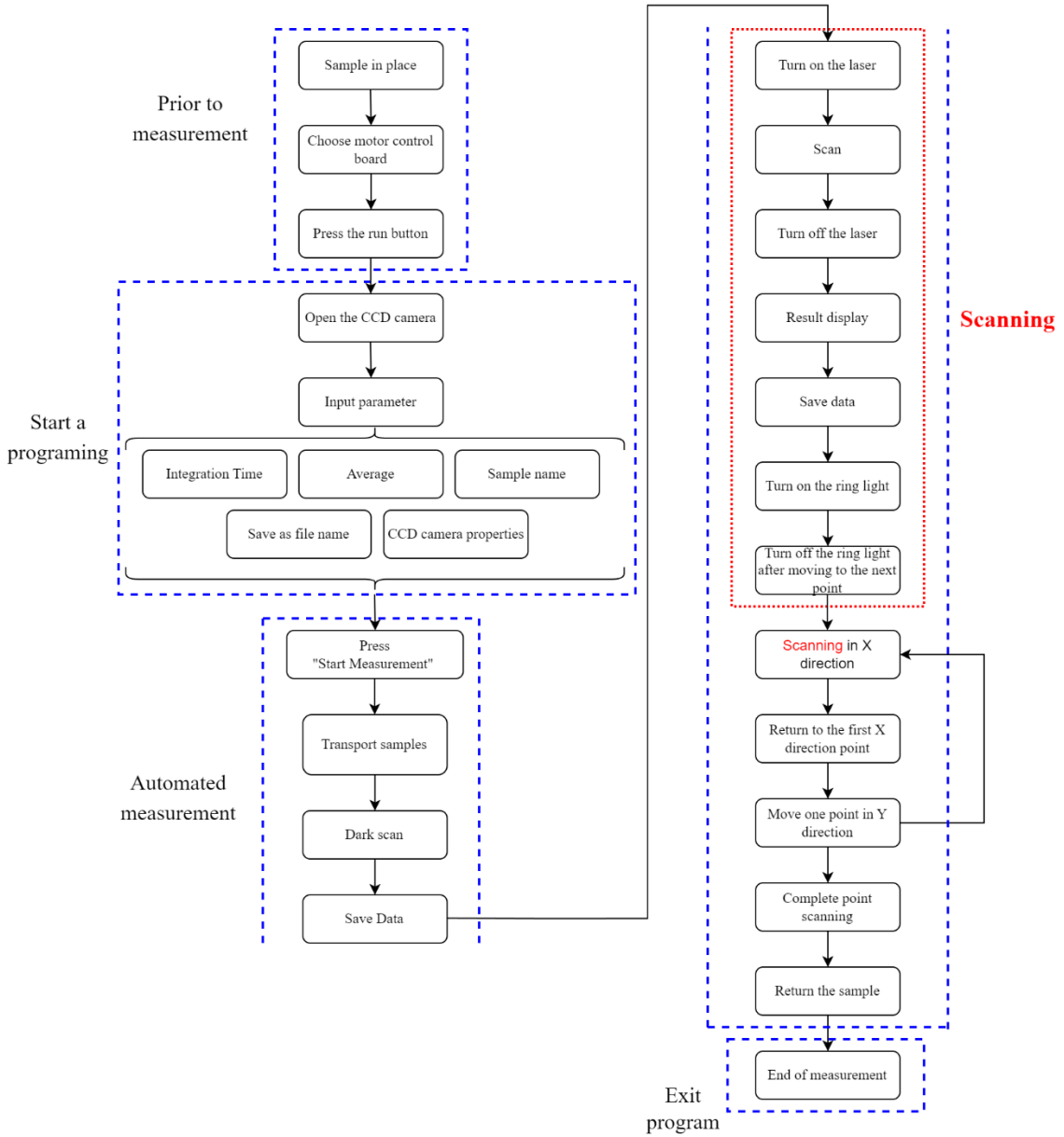
Target: Methanol	
Raman Shift(cm^{-1})	**Molecular vibration mode**
1032	C-O symmetrical stretching
1457	CH_3 anti-symmetric deformation
2833	C-H symmetric stretching
2944	C-H asymmetrical stretching

Table S3. The Raman shift and molecular vibration of ethanol

Target: Ethanol	
Raman Shift(cm^{-1})`	**Molecular vibration mode**
880	C-C-O symmetric stretching
1048	C-O stretching
1091	CH_3 rocking
1272	CH_2 deformation vibration
1450	CH_3 anti-symmetric deformation
2880	Superposition of CH_2 and CH_3 symmetrical stretching and symmetric stretching
2928	CH_2asymmetrical stretching
2972	CH_3asymmetrical stretching



(a)



(b)

Fig. S1 The (a) human-machine interface and the (b) program flow chart

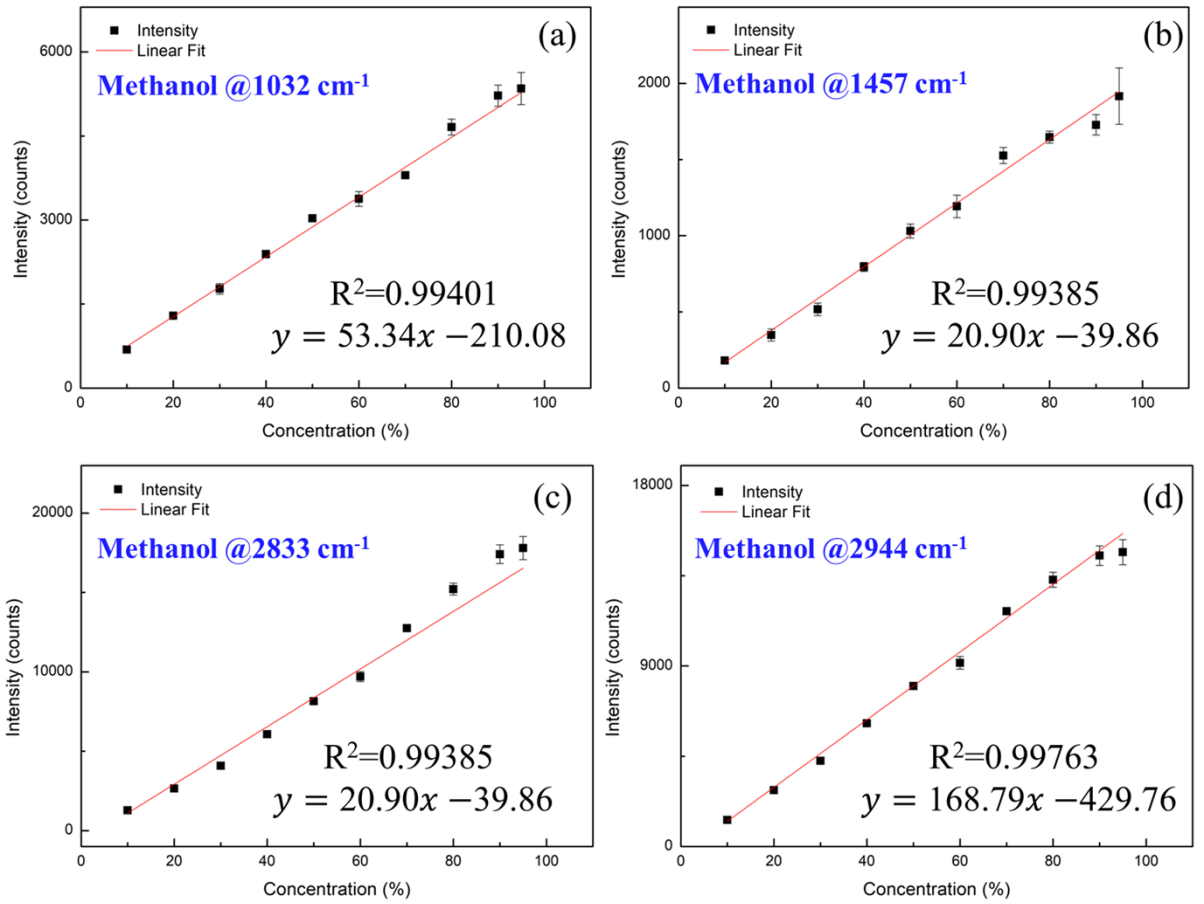


Fig. S2 Methanol concentration curve by different Raman peaks (a) 1032 cm^{-1}, (b) 1457 cm^{-1}, (c) 2833 cm^{-1}, (d) 2944 cm^{-1}

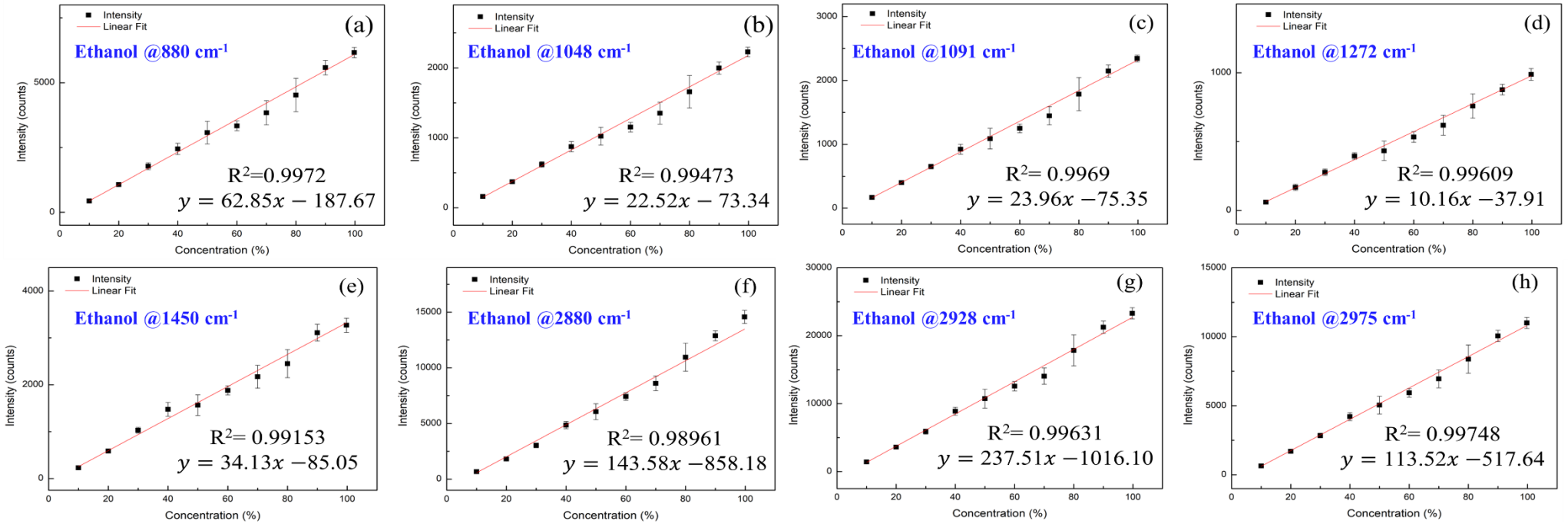


Fig. S3 Ethanol concentration curve by different Raman peaks (a) 880 cm^{-1}; (b) 1048 cm^{-1}; (c) 1091 cm^{-1}; (d) 1272 cm^{-1}; (e) 1450 cm^{-1}; (f) 2880 cm^{-1}; (g) 2928 cm^{-1}; (h) 2972 cm^{-1}